Remarks/Arguments

Claim 1 is amended to clarify the finless construction of the present sweep. Unlike the finned structure of the 6,443,237 patent, the present point structure includes a tapered top defining an apex having included angle at the apex. The included angle is obtuse substantially the entire length of the apex and causes only an initial parting stress of the fractured compacted layer as soil moves rearwardly along the top surface a length of the apex to an uppermost rear portion of the apex adjacent the upright shank. This claimed construction facilitates soil parting by the upright shank in the initially stressed fractured compacted layer but does not initiate substantial lateral displacement of the soil. The '237 patent fails to show or suggest such an apex construction, and the claimed construction reduces surface disturbance compared to a finned construction wherein parting action is substantially greater in the area ahead of the shank. Please note that the structure of claim 1 clearly provides only a parting stress whereas the fin structure of the '237 patent imparts "substantial lateral displacement of the soil", a characteristic the present invention purposely avoids to reduce surface disturbance. Therefore, claim 1 and claims 2 - 15 dependent therefrom are believed to be clearly allowable over the '237 reference, taken alone or in any combination with the remaining references.

Claim 2 further specifies an apex angle of approximately 100 degrees, a feature which is not shown or suggested by the references and which help provide parting stress without substantial soil displacement. Claims 3 - 5 set forth specific shin structure which provides the parting action and which in combination with the above-described apex structure is not shown or suggested in the references.

Claim 8, dependent from claim 3, further sets forth that the outwardly facing surfaces extending from the apex extend rearwardly past the sharp leading edge to help move the soil outwardly from the shank. Note that the structure of the '237 reference has no such extended side surface, and has a fin which clearly terminates ahead of the shank. The combination of shin structure and side surface extension with the apex structure of claim 1 is clearly not shown or suggested by the references.

Claim 6, dependent from claim 1, includes the limitation of a main body with a

bifurcated attaching area adapted to receive a lower mounting end of the shank, the bifurcated end having walls with a thickness of at least one half an inch and including apertures for receiving mounting bolt structure recessed within the apertures to prevent the moving soil from wearing the mounting bolt structure (see FIGS. 1 and 2). This structure as discussed in paragraphs [0011] and [0024] of the specification provide protection not afforded or suggested by the references. Note there also the discussion of the structure of dependent claim 7, that is, the carbidic austempered ductile iron and the thickness of the walls at the apertures, which prevent brittleness in the walls. Such a combination of structure for mounting bolt protection and access is believed not to be shown or suggested by the references. Therefore claims 6 and 7 are believed to be clearly allowable.

Claim 9 is amended to more clearly define over the references and is now written in independent form. Claim 9 includes a tapered top surface including outwardly facing surfaces extending downwardly from an apex, the surfaces forming an included angle at the apex and causing a lifting of the fractured compacted layer as soil moves rearwardly along a length of the apex to an uppermost rear portion of the apex adjacent the leading edge of the upright shank structure. Claim 9 also includes wings extending outwardly from the body rearwardly adjacent the nose and below the apex for entering a fracture area initiated by the front surface. Substantial portions of the wings lie behind the leading edge of the upright shank and enter an area of the soil below the fractured compacted layer to thereby reduce draft entry of the wings. The configuration is believed not to be shown or suggested by the references, including '237 wherein the wings lie substantially ahead of the shank structure.

The claimed lift angle (claim 10) and slope of the wings (claims 11 and 12) in combination with the structure set forth in claim 9 provide a second fracture of soil after lifted soil begins to flow around the standard. The leading edges (claims 14 and 15) are located below the top ripping plane of the nose and gradually enter the fracture plane left below the lifted compaction layer. The wings thereby initiate a second fracture of the soil profile. Since the wings enter and run in the fracture plane, a low draft entry of the wings into the plane under the compaction layer is provided. The wings are spaced rearwardly from the point a sufficient distance (claim 15) so the nose and wear shin have enough time to lift, fracture and part the

soil profile in contact with the standard prior to the wings initiating further action on the soil profile. After the nose and wear shin part the soil profile and as the upward momentum of the soil lessens, the second lift of the soil profile is initiated by the wings. By providing a point construction that allows the soil profile to lose nose-initiated upward momentum before wing contact (claim 15), wider and more aggressive wings (claim 13) can be utilized without compromising a smooth ground surface. Lifted soil falling from the aft edges (see 96 and 98) can drop directly into the slot formed behind the standard 12 so that soil flow aggressiveness around the rear of the standard is reduced to help minimize surface disturbance and reduce wear at the back of the standard. Therefore, claim 9 and claims 10 - 15 dependent therefrom are believed to be in order for allowance.

Claim 16 is amended to set forth leading wing edges located rearwardly of the forward soil-parting edge of the shin and below the top surface of the nose. The leading wing edges are located near a lowermost extremity main body so the wings enter the soil at a level just above a level of entry of the leading nose edge and initiate a second fracture of the compacted layer. The unique surface, wing and shin structure is believed not to be shown or suggested in the principle reference, taken alone or in any combination with the remaining references, and as set forth in [0009] "The wings are spaced far enough rearward from the point so that the point and wear shin have enough time to lift, fracture, and part the soil profile in contact with the shank prior to any wing action. After the parting action of the soil profile is completed, the upward lift momentum of the soil is reduced as it flows around the shank. The soil lift begins to drop or level out and simultaneously the second lift of the soil profile is initiated." Further, it is believed that the angles and dimensions set forth in the claims dependent from claim 16 in combination with the structure of claim 16 are not obvious and are not shown or suggested in the references. The significance of these features is discussed, for example, at [0007] - [0011], [0024], [0030] and [0031].

Therefore, the claims as now presented are believed to be clearly allowable.

In conclusion, it is believed that this application is in condition for allowance, and such allowance is respectfully requested.

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Respectfully,

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